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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,988	12/03/2001	Charles H. Culp	017575.0490 (TAMUS 1549)	9235
7590 04/05/2004			EXAMINER	
Baker Botts L.L.P. Suite 600 2001 Ross Avenue Dallas, TX 75201-2980			LU, KUEN S	
			ART UNIT	PAPER NUMBER
			2177	3
DATE MAILED: 04/05/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,988

Applicant(s)

CULP ET AL.

Examiner

Kuen S Lu

Art Unit

2177

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/03/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/1-17-02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Amaratunga et al. (U.S. Publication 2003/0061091, hereafter "Amaratunga") and in view of Ehlers et al. (U.S. Patent 6,216,956, hereafter "Ehlers").

As per Claims 1 and 15, Amaratunga teaches the following:

"A system for remote monitoring and controlling of energy consumption of a facility, comprising: a processor" at Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises a processor;

"a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility" at Page 7, [0048], lines 1-4 where a historical database is the to collect and store data from meters, devices and sensors at the energy consumption systems or consumption site;

"an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption data" at Page 4, [0029], lines 1-4 where a TEUP (Total Energy Use Profile) is developed for analyzing and evaluating the energy amounts and providing other energy use information, and "determine whether energy

consumption operating parameters require modification to increase efficiency” at Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

“a control engine operable to initiate operating parameter modification of an energy consumption system of the facility in response to a desired operating parameter modification” at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

Amaratunga does not specifically teach control or other engines “residing in the memory and executable by the processor” or “a memory unit coupled to the processor”.

However, Ehlers teaches a memory unit coupled to the processor at Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor.

It would have been obvious to one having ordinary skill in the art at the time of the applicant’s invention was made to combine Ehlers’ reference into Amaratunga’s by implementing the functions which require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory

loading/swapping because by doing so the processing system would have performed more efficiently.

As per claims 2, 16 and 29, Amaratunga teaches “the database receives the energy consumption data via an Internet communications network” at Fig. 1, elements, 20 and 31s, and Page 4, [0027], lines 25-26 by describing the communication link connecting to the processing module includes internet where the database is built up by the processing module at Page 7, [0048], lines 1-4 .

As per claims 3 and 17, Amaratunga teaches “the database receive the energy consumption data from a data collector disposed at the facility” at Fig. 1, elements 29 and 100, and Page 4, [0027] by showing the data collection unit is located inside of the energy consumption site.

As per claim 4 and 36, Amaratunga teaches “database further receives and stores environmental data” at Page 4, [0029] where TEUP receives and stores the environmental data, and “wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data” at Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database.

As per claim 5, Amaratunga teaches “the environmental data comprises environmental forecast information, and wherein the analysis engine is operable to determine whether operating parameter modification is required for the energy consumption system using the environmental forecast information” at Page 6, [0042] where the energy consumption prediction system utilizes factors such as nature of the

energy, energy-provider controlling factors, energy consumption site particulars, details of energy consumption system, and manufacturing or operating process variables, and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

As per claims 6 and 19, Amaratunga teaches an energy consumption system at the Abstract.

Amaratunga does not specifically teach ““a reporting engine residing in the memory and executable by the processor, the reporting engine operable to generate an energy consumption report based on the energy consumption data””.

However, Ehlers teaches an energy consumption management system having capability of reporting detailed energy consumption data as a function of time at col. 3, lines 31-37 and a memory unit coupled to the processor at Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing the reporting function on the memory because by doing so the energy consumption system would have been able to deliver the necessary status and control to the consumption premise in a timely and reliable fashion for obtaining desired operating results. Furthermore, the function requires processing on the part of the processor and its residence on the memory would have made the function executed

without invoking disk i/o and memory loading/swapping such that the processing system would have performed more efficiently.

As per claims 7 and 20, Amaratunga teaches "a validation engine operable to validate the energy consumption data" at Page 5, [0037], lines 8-20 by determining if the energy consumption system is operating efficiently and energy consumption amount is consistent with what benchmarked.

Amaratunga does not specifically teach validation engine "residing in the memory and executable by the processor.

However, Ehlers teaches a memory unit coupled to the processor at Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing the validation engine on the memory because the engine requires processing on the part of the processor and its residence on the memory would have made the function executed without invoking disk i/o and memory loading/swapping such that the processing system would have performed more efficiently.

As per claim 8, Amaratunga teaches "the validation engine is operable to validate the energy consumption data using environmental data" at Page 6, [0042] where the energy consumption prediction system identifies the likely cause of energy consumption variance by utilizing factors such as nature of the energy, energy-provider controlling

factors, energy consumption site particulars, details of energy consumption system, and manufacturing or operating process variables.

As per claims 9 and 21, Amaratunga teaches “the validation engine is operable to validate the energy consumption data using historical energy consumption data associated with the facility” at Page 5, [0039], lines 1-2 where data processing module links energy provider database to evaluate the total energy use profile and at Page 7, [0047], lines 24-28 by building up historical database.

As per claims 10, 24 and 31, Amaratunga teaches “control engine is further operable to control a rate of energy consumption data collection at the facility” at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

As per claims 11 and 25, Amaratunga teaches “the control engine is further operable to modify a rate of energy consumption data collection at the facility in response to a re-determined sequence of events” at Page 2, [0017], lines 11-17 by using transfer function for initial energy loading term or periodic update of collecting data of energy consumption at the site.

As per claim 12, Amaratunga teaches “comprising a plurality of data collectors disposed at the facility and operable to acquire energy consumption information associated with the facility” at Fig. 1, elements 140s, 142s, 150s and 152s, and Page 3, [0026], lines 1-2 where the elements are for monitoring, measuring and recording the energy consumption amounts.

As per claims 13, 26 and 30, Ehlers further teaches "data collectors are coupled together, and wherein one of the data collectors is operable to transmit the respective acquired energy consumption information to another data collector" at Fig. 4, elements 21-22 and col. 8, lines 29-36 where data collection storage functions connected to each other and multiplexed to data collection units.

As per claim 14, Ehlers further teaches "the one data collector is operable to transmit the respective acquired energy consumption information in response to a predetermined event" at col. 9, lines 58-63 where data are provided to data collection function at regular interval.

As per claim 18, Amaratunga teaches "receiving the environmental data comprises receiving environmental forecast information, and wherein determining comprises determining whether the operating parameter of the energy consumption system of the facility requires modification using the environmental forecast information" at Page 6, [0042] where the energy consumption prediction system utilizes factors such as energy consumption site particulars, and "wherein the analysis engine is further operable to determine whether operating parameter modification is required using the environmental data" at Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical.

As per claim 22, Amaratunga teaches "determining whether a value of the energy consumption data remains substantially constant for a predetermined time period and validating the energy consumption data if the value remains substantially constant for the predetermined time period" at Page 7, [0047] by identifying the likely cause for the

variance in energy consumption and comparing variables with data from the historical database.

As per claim 23, Amaratunga teaches “determining whether a value of the energy consumption data exceeds a pre-determined range for the energy consumption data; and validating the energy consumption data if the value exceeds the predetermined range” at Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database.

As per claim 27, Amaratunga teaches “determining whether a predetermined event occurs associated with energy consumption data loss” at Page 7, [0047] by identifying the likely cause for the variance in energy consumption and comparing variables with data from the historical database.

Amaratunga does not specifically teach “automatically transmitting energy consumption-information acquired by one of the data collectors to another data collector in response to the occurrence of the pre-determined event”.

However, Ehlers teaches data collector is operable to transmit the respective acquired energy consumption information in response to a predetermined event” at col. 9, lines 58-63 where data are provided to data collection function at regular interval. Furthermore, at col. 9, lines 25-32, Ehlers teaches Multiple input devices can be supported. The collected data will be normalized in pulse count to units of energy consumed. It is then passed to one function for short term storage and data considered of historical importance can be stored in another function for long term storage

As per claim 28, Amaratunga the following:

"A system for remote monitoring and controlling energy consumption of a facility, comprising: processor" at Fig. 1, element 20 and Page 4, [0030], lines 16-20 where the processing module of the energy consumption prediction system comprises processor; "a database coupled to the processor, the database operable to receive and store energy consumption data associated with the facility" at Page 7, [0048], lines 1-4 where a historical database is the to collect and store data from meters, devices and sensors at the energy consumption systems or consumption site; "an analysis engine executable by the processor, the analysis engine operable to evaluate the energy consumption" at Page 4, [0029], lines 1-4 where a TEUP (Total Energy Use Profile) is developed for analyzing and evaluating the energy amounts and providing other energy use information, and "data and determine energy consumption efficiency of the system, the analysis engine further operable to determine whether an operating parameter modification to the system would result in an energy consumption efficiency increase." at Page 5, [0037], lines 13-20 where amount of energy to produce pollution is utilized to predict if energy consumption system is operating efficiently and at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

Amaratunga does not specifically teach the analysis engine "residing in the memory and executable by the processor" or "a memory unit coupled to the processor" or "plurality of data collectors disposed at the facility, the plurality of data collectors operable to automatically transmit energy consumption data to the processor, the energy consumption data associated with an energy consumption system of the facility".

However, Ehlers teaches a memory unit coupled to the processor at Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy management system includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor.

Furthermore, Ehlers teaches multiple input devices can be supported. The collected data will be normalized in pulse count to units of energy consumed. It is then passed to one function for short term storage and data considered of historical importance can be stored in another function for long term storage at col. 9, lines 25-32.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing multiple data collection and storage functions for providing short and long term data storage separately, and where the functions require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory loading/swapping because by doing so the processing system would have performed more efficiently.

As per claim 32, Ehlers further teaches "each of the data collectors is further operable to store a history of energy consumption data values for a predetermined time period" at Fig. 4, elements 21 and 22 where historical data storage is coupled with data collection and storage functions.

As per claim 33, Ehlers further teaches "each of the data collectors is operable to transmit a predetermined quantity of the energy consumption data values occurring

prior to and after a predetermined event to the processor after the occurrence of the predetermined event” at col. 5, lines 11-14 by using historical data of energy consumption to compute energy consumption of one load.

As per claim 34, Ehlers further teaches “each of the data collectors is operable to determine an average energy consumption data value for a predetermined time interval and transmit the average energy consumption data value to the processor if the predetermined event does not occur” at col. 5, lines 11-14 by using historical data of energy consumption to compute energy consumption of, at least one load.

As per claim 35, Ehlers further teaches “each of the data collectors is operable to transfer the respective energy consumption data to another data collector upon the occurrence of a predetermined event” at Fig. 4, elements 21 and 22 where historical data storage is coupled with data collection and storage functions.

As per claim 37, Amaratunga teaches “a control engine executable by the processor, the control engine operable to initiate the operating parameter modification of the energy consumption system” at Page 7, [0047], lines 24-28 where a feedback control capability is built for attempting to bring the energy consumption system to a more efficient operating state.

Amaratunga does not specifically teach control engine “residing in the memory and executable by the processor” or “a memory unit coupled to the processor”.

However, Ehlers teaches a memory unit coupled to the processor at Fig. 1, elements 20-30 and col. 7, lines 1-3 and 16-17 where an energy management system

includes processor and memory next to each other, and data stored in the memory is accessed and processed by the processor.

It would have been obvious to one having ordinary skill in the art at the time of the applicant's invention was made to combine Ehlers' reference into Amaratunga's by implementing the functions which require processing on the part of the processor, such as environmental condition control, price and energy consumption control, on the memory unit such that they can be processed without invoking disk i/o and memory loading/swapping because by doing so the processing system would have performed more efficiently.

Conclusions

5. The prior art made of record
 - A. U.S. Publication 2003/0061091
 - B. U.S. Patent 6,216,956

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- C. U.S. Patent 5,651,264
 - U. www.knowledgeprocesssoftware.com/newweb/CounterDet, Data Mining to Improve Energy Efficiency in Buildings, September 2001

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuen S Lu whose telephone number is 703-305-4894.

The examiner can normally be reached on 8 AM to 5 PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

KL

Patent Examiner

March 25, 2004

John E. Breene
JOHN BREENE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100